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REMARKS

Claims remaining in the present patent application are numbered 1-30. The rejections and comments of the Examiner set forth in the Office Action dated July 10, 2003 have been carefully considered by the Applicants. Applicants respectfully request the Examiner to consider and allow the remaining claims.

35 U.S.C. §102 Rejection

The present Office Action rejected Claims 1-5, 8-13, 15-25, and 28-30 under 35 U.S.C. 102(b) as being anticipated by Hamada et al., "A High-Speed Boundary Search SHMOO Plot for ULSI Memories" (IEEE Article, hereafter "Hamada"). Applicants have reviewed the above cited references and respectfully submit that the present invention as recited in Claims 1-30, is neither anticipated nor rendered obvious by the Hamada reference.

Independent Claims 1 and 21

Applicants respectfully point out that independent Claim 1 and 21 each recites that the present invention includes, in part:

[A] method of testing operational boundaries comprising:  
discovering an operational range over a plurality of varying operating parameters for a

device by testing points, as defined by said plurality of varying operating parameters, beginning from a known interior operational point, to discover adjacently coupled boundary points that define an operational boundary of said device that comprises a plurality of boundary points just outside of said operational range, without testing all of a plurality of interior operational points within said operational boundary. (Emphasis Added)

Embodiments of the present invention pertain to a method and apparatus for conducting a boundary search for shmoo tests on an electronic device. In particular, independent Claims 1 and 21 recite that the test discovers an operational boundary of a device by testing the device beginning at a known interior operational point.

Applicants respectfully note that the prior art reference, Hamada, does not comprise nor suggest the present method or computer system implementing the method, that comprises, in particular, the test beginning from a known interior operational point to discover adjacently coupled boundary points that define the operational boundary, as claimed in independent Claims 1 and 21 of the present invention.

In contrast to independent Claims 1 and 21 of the present invention, the Hamada reference, discloses a method for testing operational boundaries. In particular, the Hamada reference is distinct from the present invention, in that execution of the shmoo plot occurs along the horizontal

axis of the shmoo plot to discover pass/fail boundary points along the horizontal axis. This is in contrast to the present invention, that implements the shmoo test by testing points that are not restricted to the horizontal axis to discover adjacently coupled boundary points, as disclosed in independent Claims 1 and 21.

Moreover, the Hamada reference starts the shmoo plot in the fail region, as follows: "It is desirable to start in the fail region because the testing time becomes shorter than starting in the pass region." (See Hamada, section 2-2). This is in direct contrast to the present invention, which implements the shmoo test beginning from a known interior operational point, as disclosed in independent Claims 1 and 21.

In summary, the present invention, in contrast to the Hamada reference, claims a shmoo plot that discovers adjacently coupled boundary points that define an operational boundary of a device, wherein the shmoo plot begins from a known interior operational point, as disclosed in independent Claims 1 and 21.

Thus, Applicants respectfully submit that the present invention as disclosed in independent Claim 1 is not anticipated by the Hamada reference, and is in a condition for allowance. In addition, Applicants respectfully submit

that Claims 2-10 which depend from independent Claim 1 are also in a condition for allowance as being dependent on an allowable base claim. Similarly, Applicants respectfully submit that the present invention as disclosed in independent Claim 21 is not anticipated by the Hamada reference, and is in a condition for allowance. In addition, Applicants respectfully submit that Claims 21-30 which depend from independent Claim 21 are also in a condition for allowance as being dependent on an allowable base claim.

#### Independent Claim 11

Applicants respectfully point out that independent Claim 11 recites that the present invention includes, in part:

A method of testing operational boundaries comprising:

b) beginning from a known operational point of said device, testing adjacently coupled points in a direction until an initial failure point is discovered; and

c) from said initial failure point, testing for and discovering each of a plurality of failure points that are adjacently coupled until returning to said initial failure point, said plurality of failure points defining an operational boundary for said device that bounds an operational range comprising a plurality of interior operational points within said operating region for said device. (Emphasis Added)

Embodiments of the present invention pertain to a method and apparatus for conducting a boundary search for shmoo

tests on an electronic device. In particular, independent Claim 11 recites that the test discovers an operational boundary of a device by testing the device beginning at a known interior operational point.

The arguments set forth for independent Claims 1 and 21 are equally applicable for independent Claim 11. In particular, Applicants respectfully note that the prior art reference, Hamada, does not comprise nor suggest the present method or computer system implementing the method, that comprises, in particular, the test beginning from a known interior operational point to discover adjacently coupled boundary points, as claimed in independent Claim 11 of the present invention.

Thus, Applicants respectfully submit that the present invention as disclosed in independent Claim 11 is not anticipated by the Hamada reference, and is in a condition for allowance. In addition, Applicants respectfully submit that Claims 12-20 which depend from independent Claim 11 are also in a condition for allowance as being dependent on an allowable base claim.

35 U.S.C. §103 Rejection

The present Office Action rejected Claims 6, 7, 14, 26, and 27 under 35 U.S.C. 103(a) as being unpatentable over

Hamada in view of Huston et al. (U.S. Patent No. 6,079,038). Applicants have reviewed the above cited references and respectfully submit that the present invention as recited in Claims 1-30, is neither anticipated nor rendered obvious by the Hamada reference taken alone or in combination with the Huston et al. reference.

Applicants respectfully submit that the present invention as disclosed in dependent Claims 6, 7, 14, 26, and 27 are not anticipated by the Hamada reference, taken alone or in combination with the Huston et al. references since they depend on allowable base Claims 1, 11, and 21, as previously discussed. As such, dependent Claims 6, 7, 14, 26, and 27 are in a condition for allowance as being dependent on allowable base claims, 1, 11, and 21.

#### CONCLUSION

In light of the facts and arguments presented herein, Applicants respectfully request reconsideration of the rejected Claims.

Based on the arguments presented above, Applicants respectfully assert that Claims 1-30 overcome the rejections of record. Therefore, Applicants respectfully solicit allowance of these Claims.

The Examiner is invited to contact Applicants' undersigned representative if the Examiner believes such action would expedite resolution of the present Application.

Respectfully submitted,

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Date: 10/10/03



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